DOCUMENT RESUME

ED 170 027 PS 010 512

AUTHOR Frey, Karin S.; Slaby, Ronald G.
TITLE Differential Teaching Methods Used with Girls and Boys of Moderate and High Achievement Levels.
PUB DATE Mar 79
NOTE 16p.; Paper presented at the Biennial Meeting of the Society for Research in Child Development (San Francisco, California, March 15-18, 1979)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Achievement; Elementary School Students; Feedback; Females; Males; Research; *Sex Differences; *Sex Role; Sex Stereotypes; *Teacher Attitudes; *Teaching Methods; Tutoring

ABSTRACT

The purpose of this paper was to examine how behavioral characteristics (such as achievement level) of children may interact with gender to elicit differential treatment. Subjects were 31 men and 31 women who participated in two tutoring sessions with a fifth-grade pupil. Nine pupils, actually confederates of the experimenter, were trained to play the parts of both a moderate-achieving pupil and a high-achieving pupil. After the first tutoring session, tutors of high-achieving pupils predicted that their pupil would answer more problems correctly than did tutors of moderate-achieving pupils. In both sessions, results show that men asked boys to explain their answers more than they asked girls to explain their answers and that women did not differentiate between girls and boys in the explanations requested. In the second session, differences in the treatment of girls and boys were apparent in the high-achieving condition. Of the four pupil groups, high-achieving girls received the lowest levels of Positive feedback and High-ability statements, significantly less than high-achieving boys. High-achieving girls received the highest levels of Easy-task statements, significantly more than high-achieving boys. These findings are congruent with cultural norms that high achievement is more appropriate for men than for women. (Author/MP)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED170027

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

DIFFERENTIAL TEACHING METHODS USED WITH GIRLS AND BOYS OF MODERATE AND HIGH ACHIEVEMENT LEVELS

Karin S. Frey
Princeton University

Ronald G. Slaby
Harvard University

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Karin S. Frey

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

Meeting of the Society for Research in Child Development

San Francisco, California

March, 1979

PS010512

It's been said that there are two types of people in this world: Those who divide people into two types, and those who do not. Those of us in sex role research, of course, tend to be among the former, and we often don't pay much attention to attributes other than gender. For example, there is a growing literature on disparities in the attention and feedback given to girls and boys; however, we have relatively little understanding of how particular behavioral characteristics of children may interact with gender to elicit differential treatment. Certain behavioral characteristics, such as achievement and activity levels, are differentially associated with males and females in our society. Adult treatment of girls and boys may be very different at different levels of sex-linked behaviors.

In the present study, for example, adults treated moderate-achieving girls and boys very similarly, and treated high-achieving girls and boys very differently. Important treatment differences were not apparent when the data for the high-achievement groups were combined with data for the moderate-achievement groups.

Our subjects consisted of 31 men and 31 women, all of whom were were parents of children. They were told that we were interested in seeing how children with different abilities respond to a wide range of teaching styles employed "naturally" by parents. Thus, the adults were asked to tutor a fifth-grade pupil. The pupils were actually confederates of the experimenters. Each of the nine children who served as pupils was trained to play the parts of both a moderate-achieving pupil and a high-achieving pupil. Thus, we had a 2 x 2 x 2 design: Sex of subject by Sex of pupil by Achievement

level. The moderate and high-achievement conditions differed only in the percentage of problems initially answered correctly by the pupils. In both conditions, the pupils were trained to respond appropriately to hints offered by the tutors following an incorrect answer. Also, pupils refrained from initiating any conversations with their tutors. On the whole, our confederates were outstanding; we had to eliminate only two subjects because of procedural errors.

Figure 1 shows two examples of the problem format that we used. We chose this format because it required fairly simple responses on the part of our confederates, while allowing for some flexibility on the part of our subjects. There were 18 problem sets, each consisting of five cards. The task was to identify the one card that was not compatible with the concept illustrated by the other four cards. Half of the problems illustrated spatial or mathematic concepts, and half of the problems illustrated verbal concepts. The top problem in Figure 1 illustrates the mathematic concept, "one-half," and the bottom problem illustrates the verbal concept, "through."

The problems were divided into two sessions, interrupted by a 15-minute break. The purpose of the initial session was to allow the adult tutors to become acquainted with the level of performance shown by their pupil. Prior to each session, adults were asked to predict how many problems their pupils would answer correctly. We expected that predictions for the second session would be based, in part, on the pupil's level of performance in the first session. Therefore, if our achievement manipulation was successful, the second set of predictions would show clear differences between the two achievement groups. Table 1 illustrates the interaction of Achievement level and Session, with Session as a with-in subjects variable, $F(1,54) = 20.4$, $p < 01$.

Predictions for the high-achieving pupils increased significantly from the first to the second session, t (54) = 3.62, $p < .01$. Predictions for the moderate-achieving pupils, however, did not change. Performance predictions for the second session were higher for high-achieving pupils than for moderate-achieving pupils, t (54) = 3.68, $p = < .01$.

Post-performance evaluations by the subjects indicated that high-achieving pupils were perceived to have answered more problems correctly F (1,54) = 48.69, $p = < .001$; and to have nigher ability F (1,54) = 36.12, $p < .001$, than moderate-achieving pupils. Thus, our manipulation appeared to have been successful.

The tutoring sessions were recorded and the verbal content of each phrase was scored according to the system illustrated in Table 2. An example of each category appears on the right side of the table. The following discussion will be limited to the statistically significant findings.

Analysis of variance revealed that boys were requested to explain their incorrect answers more than girls were, but if we look at the significant Sex of subject by Sex of pupil interaction, F (1,58) = 3.99, $p < .05$, in Table 3, it is clear that only male subjects requested explanations from boys more often than from girls, t (58) = 2.75, $p < .01$. Women requested explanations from girls as frequently as they requested explanations from boys. This lends support to other investigators (e.g., Lynn, 1974; Johnson, 1963) who have suggested that males differentiate between boys and girls to a greater extent than females do.

There were no main effects of Achievement level; however, when the joint effects of Achievement level and Sex of pupil are considered, several significant findings emerge. Table 4 illustrates the interaction of Achievement

level and Sex of pupil on Positive feedback. $F(1,54) = 8.76$, $p < .01$. Girls in the high achieving condition received lower levels of Positive feedback than either boys in the high-achieving condition, $t(54) = 2.55$,, $p < .05$, or girls in the moderate-achieving condition, $t(54) = 2.25$, $p < .05$. Moderate-achieving boys did not differ from the other groups. We find even greater discrepancies between high-achieving girls and high-achieving boys, $F(1,54) = 4.82$, $p < .05$, when we look at the measure of combined Positive and Neutral feedback, $t(54) = 2.69$, $p < .05$, (Table 5). This time, neither moderate-achieving girls nor moderate-achieving boys differed from their high-achieving counterparts.

Sex differential treatment was also apparent in the frequencies of High-ability statements and Easy-task statements. As shown in Table 6, tutors were least likely to tell a high-achieving girl that she was competent, and most likely to tell her that the work she was doing was easy. Tutors were most likely to tell a high-achieving boy that he was competent and least likely to tell him that the work he was doing was easy. The distributions of these statements in the high-achievement level differ significantly from chance (χ^2 (1) = 5.81, $p < .05$ for High-ability statements, and χ^2 (1) 4.27, $p < .05$, for Easy-task statements). These findings are especially intriguing since they correspond to research showing that men are more likely than women to attribute their own success to ability (Weiner, Frieze, Kukla, Reed, Rest, & Rosenbaum, 1971); and that women, more than men, tend to attribute their own success to having an easy task (Frieze, Fisher, McHugh, & Valle, 1975).

Thus, at high achievement levels, girls received less Positive feedback than boys, fewer compliments on their ability, and more comments that

deprecated their achievements. These findings are congruent with cultural norms specifying that high achievement is more appropriate for men than for women. This study did not include a low achievement condition. Since boys are generally over-represented among children with learning problems, future research might look for sex differences in treatment at low as well as at high achievement levels. It might be hypothesized, for example, that low-achieving boys would receive relatively low levels of Positive feedback, since low-achieving boys violate norms for sex appropriateness in the same way that high-achieving girls do.

I would like to re-emphasize that without including Achievment level as a factor in our design, we would have erroneously concluded that girls and boys experience few differences in treatment, a false negative finding. Without considering Achievement level, we can also expect errors of the other kind, false positive conclusions. For example, a strong sex difference that is limited to girls or boys of a particular achievement level may be erroneously generalized to all girls and boys. A common finding in classroom observations is that boys receive <u>both</u> more praise and more criticism than girls do (Etaugh & Harlow, 1975; Serbin, et al, 1976). The implication is that these findings represent a general sex difference in treatment. A very different conclusion is suggested by the work of Good, Sikes, & Brophy (1973), who looked at teacher interaction with boys and girls of high, moderate, and low achievement levels. They found that the high-achieving boys received most of the praise, while low-achieving boys received most of the criticism in the classrooms. For the boys in question, this is clearly an important distinction. If those of us doing sex role research truly believe that there are more than two types of people in this world, then our research

designs should more frequently include, not only gender, but also relevant behavioral characteristics.

BIBLIOGRAPHY

Dweck, C., Davidson, W., Nelson, S., & Enne, B. Sex differences in learned helplessness: II. The contingencies of evaluative feedback in the classroom; III. An experimental analysis. Developmental Psychology 1978, 14: 268-276.

Etaugh, C. & Harlow, H. Behaviors of male and female teachers as related to behaviors and attitudes of elementary school children. Journal of Genetic Psychology 1975, 127: 163-170.

Frieze, I., Fisher, J., McHugh, M., & Valle, V. Attributing the causes of success and failure: Internal and external barriers to achievement in women. Paper presented at the Conference on New Directions for Research on Women, Madison, Wisconsin, May 30-June 2, 1975.

Good, T., Sikes, J., & Brophy, J. Effects of teacher sex and student sex on classroom interaction. Journal of Education 1973, 65: 74-87.

Johnson, M. Sex role learning in the nuclear family. Child Development 1963, 34: 319-333.

Lynn, D. The Father: His Role in Child Development. Belmont, Calif.: Brooks/Cole, 1974.

Serbin, L., O'Leary, K., Kent, R., & Tronick, I. A comparison of teacher response to the pre-academic and problem behavior of boys and girls. Child Development 1976, 44: 796-804.

Figure 1: Examples of a mathematic problem ("one-half") and of a verbal problem ("through")

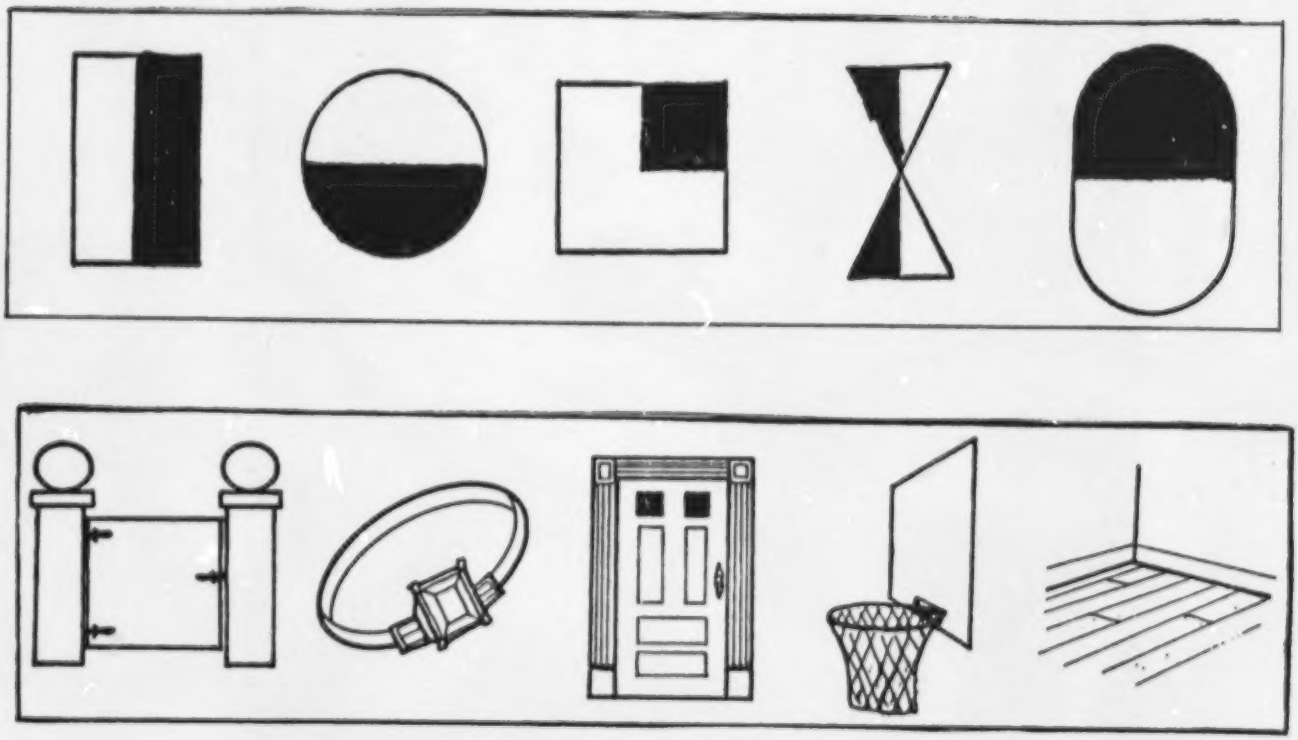

Table 1: MEAN PERFORMANCE EXPECTATIONS AS A FUNCTION OF PUPIL ACHIEVEMENT LEVEL AND SESSION

ACHIEVEMENT LEVEL	SESSION 1	SESSION 2
MODERATE	5.46	5.23
HIGH	5.11	6.72

Table 2: VERBAL CODING SYSTEM

Category	Example
Positive feedback	"That's right." "Good."
Neutral feedback	"Okay." "Uh-huh."
Negative feedback	"Nope."
Request for explanation	"Why did you choose that one?"
Hint	"What are these objects used for?"
Explanation	"These are all used to measure."
Social/personal comment	"Are you nervous?"
Teacher-inability statement	"I had trouble with that one myself."
High-ability statement	"You're pretty smart."
Low-effort statement	"You didn't really think about that one."
Difficult-task statement	"That was a hard problem."
Easy-task statement	"This is an easy one."

Table 3: MEAN NUMBER OF EXPLANATIONS REQUESTED PER PROBLEM AS A FUNCTION OF SEX OF PUPIL AND SEX OF SUBJECT

SEX OF SUBJECT	GIRLS	BOYS
WOMEN	1.42	1.39
MEN	1.39	2.59

Table 4: MEAN FREQUENCIES PER PROBLEM OF POSITIVE FEEDBACK GIVEN TO GIRLS AND BOYS OF MODERATE AND HIGH ACHIEVEMENT LEVELS

ACHIEVEMENT LEVEL	GIRLS	BOYS
MODERATE	4.78	3.00
HIGH	2.29	5.60

Table 5: MEAN FREQUENCIES PER PROBLEM OF POSITIVE + NEUTRAL FEEDBACK GIVEN TO GIRLS AND BOYS OF MODERATE AND HIGH ACHIEVEMENT LEVELS

ACHIEVEMENT LEVEL	GIRLS	BOYS
MODERATE	5.81	5.17
HIGH	3.43	7.44

Table 6: NUMBER OF HIGH-ABILITY STATEMENTS AND EASY-TASK STATEMENTS GIVEN TO GIRLS AND BOYS OF MODERATE AND HIGH ACHIEVEMENT LEVELS

ACHIEVEMENT LEVEL	HIGH-ABILITY		EASY-TASK	
	GIRLS	BOYS	GIRLS	BOYS
MODERATE	52	60	16	17
	n=16	n=16	n=16	n=16
HIGH	47	83	23	13
	n=14	n=16	n=14	n=16